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EXAMINER

DAVIS, GEORGE B .

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 02/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/921993	Applicant(s) Scarborough et al
Examiner George Davis	Group Art Unit 2121

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE Three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☐ Responsive to communication(s) filed on _____.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-37 is/are pending in the application.
- ☐ Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 137 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____.
 - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) 4 and 5
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

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DETAILED ACTION

Claim Objections

1. Claim 2 is objected to because of the following informalities: "performing the method of claim 1" should be replaced by the wording of the method steps of claim 1.

Claim 10, line 4, delete "and".

Appropriate correction is required.

Claim Rejections - 35 U.S.C. § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-37 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims invention recite a mathematical algorithm without any tangible result limitation that are drawn to a practical application. Therefore, the claims are directed to non-statutory subject matter.

Claim Rejections - 35 U.S.C. § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-37 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Dewar, U.S. Pat. Pub. No. US 2003/0191680 A1.

As per claim 1, Dewar discloses electronically collecting pre-hire information from the applicants (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4), collecting post-hire information for the applicants based on job performance of the applicants after hire (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4) and from the pre-hire information and the post-hire information, generating an artificial intelligence-based predictive model operable to generate one or more job performance criteria predictors based on input pre-hire information from new applicants (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

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Ass per claim 2, Dewar discloses computer-readable medium comprising computer-executable instructions for performing the method of claim 1 (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 3, Dewar discloses limiting the applicants for the model to those from a particular geographic area (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4) and constructing the model as a geographically-specialized model (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 4, Dewar discloses limiting the applicants for the model to those with a particular educational level (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4) and constructing the model as an educational level-specialized model (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 5, Dewar discloses limiting the applicants for the model to those with a particular occupation (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4) and constructing the model as an occupational specialized model (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 6, Dewar discloses identifying in the pre-hire information one or more characteristics that are ineffective predictors (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4) and omitting the ineffective predictors as inputs to the model (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 7, Dewar discloses identifying in the pre-hire information one or more

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characteristics that are ineffective predictors (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4) and providing an indication that the characteristics no longer need to be collected (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 8, Dewar discloses a predictor indicating whether a job candidate will be voluntarily terminated (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 9, Dewar discloses a predictor indicating whether a job candidate will be eligible for rehire after termination (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 10, Dewar discloses identifying in the pre-hire information one or more characteristics that are ineffective predictors (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4) and responsive to identifying the ineffective predictors, collecting new pre-hire information not including the ineffective predictors (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4) and building a refined model based on the new pre-hire information (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 11, Dewar discloses adding one or more new characteristics to be collected when collecting the new pre-hire information (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

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As per claim 12, Dewar discloses evaluating the effectiveness of the new characteristics (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 13, Dewar discloses selecting a set of input parameters indicating pre-hire characteristics of an employee, wherein the pre-hire characteristics are available before hiring the employee and are collected electronically from the employee (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4), selecting a set of output parameters indicating post-hire outcomes available after hiring the employee (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4) and training a neural network with the input and output parameters (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 14, Dewar discloses choosing a set of one or more candidate characteristics, wherein the characteristics indicate data available before hiring an employee (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4) testing effectiveness of the candidate characteristics in predicting the post-hire characteristics (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4) and responsive to determining the candidate information is effective, incorporating the candidate information into the model (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 15, Dewar discloses generating a plurality of predictive artificial intelligence models based on the pre-hire and post-hire information wherein at least two of the artificial intelligence models are of different types (figures 1-5 and page 15, first column, last paragraph

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and second column, lines 1-4), testing effectiveness of the models to select an effective model (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4) and applying the effective model to predict post-hire information not yet observed (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 16, Dewar discloses at least one of the models is a neural network (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 17, Dewar discloses at least one of the models is an expert system (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 18, Dewar discloses at least one of the models is a fuzzy logic system (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 19, Dewar discloses at least one of the models is an information theoretic model (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 20, Dewar discloses at least one of the models is a neuro fuzzy model (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 21, Dewar discloses identifying at least one of the models as exhibiting impermissible bias (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4) and avoiding use of the models exhibiting impermissible bias (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 22, Dewar discloses the impermissible bias is against a protected group of persons (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

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As per claim 23, Dewar discloses collecting information via an electronic device presenting a set of questions to employment candidates, wherein the questions are stored in a computer-readable medium (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4), testing effectiveness of at least one of the questions in predicting the post-hire information (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4) and responsive to determining the question is ineffective, deleting the question from the computer-readable medium (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 24, Dewar discloses predictiveness tested based on information theoretic techniques (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 25, Dewar discloses inputs for accepting one or more characteristics based on pre-hire information for a job applicant (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4) one or more predictive outputs indicating one or more predicted job effectiveness criteria based on the inputs, wherein the predictive model is an artificial intelligence-based model constructed from pre-hire data electronically collected from a plurality of employees and post-hire data, and the model generates its predictive outputs based on the similarity of the inputs to pre-hire data collected for the plurality of employees and their respective post-hire data (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

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As per claim 26, Dewar discloses the predictive model comprises a predictive output indicating a rank for the job applicant (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 27, Dewar discloses the rank is relative to other applicants (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 28, Dewar discloses the rank is relative to the plurality of employees (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 29, Dewar discloses a predictive output indicating probability of group membership for the job applicant (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 30, Dewar discloses the predictive model comprises a predictive output indicating predicted tenure for the job applicant (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 31, Dewar discloses a predictive output indicating predicted tenure for the job applicant (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 32, Dewar discloses a predictive output indicating predicted number of accidents for the job applicant (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

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As per claim 33, Dewar discloses a predictive output indicating whether the applicant will be involuntarily terminated (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 34, Dewar discloses the predictive model comprises a predictive output indicating whether the applicant will be eligible for rehire after termination (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 35, Dewar discloses inputs for accepting one or more characteristics based on pre-hire information for a job applicant (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4), one or more predictive outputs indicating one or more predicted job effectiveness criteria based on the inputs, wherein the predictive model is constructed from pre-hire data electronically collected from a plurality of employees and post-hire data, wherein the pre-hire data is based on a question set refined by having identified and removed one or more questions as ineffective (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 36, Dewar discloses the ineffective questions are identified via an information transfer technique (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

As per claim 37, Dewar discloses the model is an artificial intelligence-based model (figures 1-5 and page 15, first column, last paragraph and second column, lines 1-4).

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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Davis whose telephone number is (703) 305-3891. The examiner can normally be reached on Monday through Thursday from 8:00 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anil Khatri, can be reached on (703) 305-0282. The fax phone number for the organization where this application or proceeding is assigned is (703) 746-7240.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

February 8, 2004

A handwritten signature in black ink, appearing to read 'G. Davis', with a large, stylized loop at the end.

GEORGE B. DAVIS

PRIMARY PATENT EXAMINER